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STRUCTURE FILE UPDATES: 19 OCT 2003 HIGHEST RN 606921-26-0
DICTIONARY FILE UPDATES: 19 OCT 2003 HIGHEST RN 606921-26-0

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

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PROPERTIES for more information. See STNote 27, Searching Properties
in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=>
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L1 STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1 STR
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

Structure attributes must be viewed using STN Express query preparation.

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SAMPLE SEARCH INITIATED 15:47:03 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 1 TO ITERATE

100.0% PROCESSED 1 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 1 TO 80
PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1

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FULL SEARCH INITIATED 15:47:09 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 38 TO ITERATE

100.0% PROCESSED 38 ITERATIONS (3 INCOMPLETE) 4 ANSWERS
SEARCH TIME: 00.00.01

L3 4 SEA SSS FUL L1

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	148.15	148.36

FILE 'CAPLUS' ENTERED AT 15:47:16 ON 20 OCT 2003
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FILE COVERS 1907 - 20 Oct 2003 VOL 139 ISS 17
FILE LAST UPDATED: 19 Oct 2003 (20031019/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l3
L4

7 L3

=> s l4/prep
FIELD CODES CANNOT BE CHANGED HERE
You may have tried to apply a field code to a term that already has a field code. You can only add a field code to a term that has no field code appended to it.

=> s l4 and prep?
L5 4 L4 AND PREP?

=> d ibib abs hitstr tot

L5 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2002:615581 CAPLUS

DOCUMENT NUMBER: 137:154951

TITLE: Preparation and purification of antiviral disulfonic acid disodium salt

INVENTOR(S): Iera, Silvio; Demerson, Christopher Alexander; Lunetta, Jacqueline Francesca; MacEwan, Michael Francis; McMahon, Wayne Gregory; Mohan, Arthur G.; Papamichalakis, Maria; Potowski, John Richard

Wyeth, John, and Brother Ltd., USA

SOURCE: PCT Int. Appl., 17 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002062769	A2	20020815	WO 2002-US2933	20020131
WO 2002062769	A3	20030424		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TH, TR, TT, TZ, UA, UG, UZ, VN, VU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2002151548 A1 20021017 US 2002-66356 20020131

PRIORITY APPLN. INFO.: US 2001-266124P P 20010202

OTHER SOURCE(S): CASREACT 137:154951

AB The antiviral compd. 4',4'-bis[4,6-bis[3-[[bis(carbamoylmethyl-1-sulfamoyl]phenylamino)](1,3,5)triazin-2-ylamino]biphenyl-2,2'-disulfonic acid and its pharmaceutically acceptable salts is prepd. by (a) reacting 2-(3-nitrobenzenesulfonylamino)acetamide with ClCH₂CONH₂ in the presence of N,N-dimethylformamide and a base to form

2-[carbamoylmethyl(3-nitrobenzenesulfonyl)amino]acetamide; (b) treating the 2-[carbamoylmethyl(3-nitrobenzenesulfonyl)amino]acetamide with a reducing agent to form 2-[[3-Aminobenzenesulfonyl]carbamoylmethylamino]acetamide; (c) treating the

2-[[3-aminobenzenesulfonyl]carbamoylmethylamino]acetamide with cyanuric chloride to give 2-[[4-[4-[[Bis-carbamoylmethylsulfamoyl]benzyl]-6-chloro-[1,3,5]triazin-2-ylmethyl]benzenesulfonyl]carbamoylmethylamino]acetamide; and (d) reacting the 2-[[4-[4-[[bis(carbamoylmethyl)sulfamoyl]benzyl]-6-chloro-[1,3,5]triazin-2-ylmethyl]benzenesulfonyl]carbamoylmethylamino]acetamide with disodium salt of 4,4'-diamino-2,2'-biphenyldisulfonic acid.

197366-24-BP

IT RL: IMP (Industrial manufacture); PREP (Preparation) (prepn. and purifn. of antiviral disulfonic acid disodium salt)

RN 197366-24-B CAPLUS

L5 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

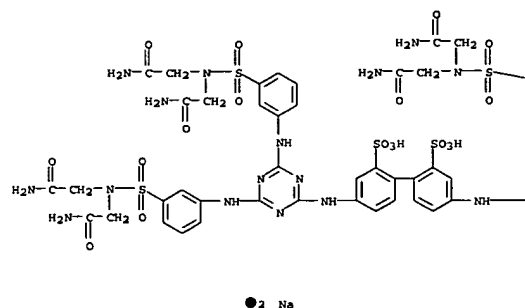
L5 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

CN [1,1'-Biphenyl]-2,2'-disulfonic acid,

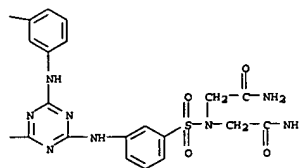
4,4'-bis[[4,6-bis[[3-[[bis(2-amino-2-oxoethyl)amino]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-, disodium

salt (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L5 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2001:505090 CAPLUS

DOCUMENT NUMBER: 136:95595

TITLE: RFI-641 inhibits entry of respiratory syncytial virus via interactions with fusion protein

AUTHOR(S): Razinkov, V.; Gazumyan, A.; Nikitenko, A.; Ellestad, G.; Krishnamurthy, G.

CORPORATE SOURCE: Department of Biological Chemistry, Wyeth-Ayerst Research, Pearl River, NY, 10965, USA

SOURCE: Chemistry & Biology (2001), 8(7), 645-659

CODEN: CBOLE2; ISSN: 1074-5521

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Background: RFI-641, a small dendrimer-like compd., is a potent and selective inhibitor of respiratory syncytial virus (RSV), which is currently a clin. candidate for the treatment of upper and lower respiratory tract infections caused by RSV. RFI-641 inhibits RSV growth with an IC₅₀ value of 50 nM and prevents syncytia formation in tissue culture. RSV contains three surface glycoproteins, a small

hydrophobic (SH) protein of unknown function, and attachment (G) and fusion (F) proteins that enable binding and fusion of virus, resp., with target cells. Because of their role in attachment and fusion, the G and F surface proteins are prominent targets for therapeutic intervention. RFI-641 was previously shown to bind purified preps. of RSV fusion protein. Based on this observation, in conjunction with the biol. results, it was speculated that the fusion event might be the target of these inhibitors. Results: A fusion assay based upon the relief of self-quenching of octadecyl rhodamine R18 was used to det. effects of the inhibitors on binding and fusion of RSV. The results show that RFI-641 inhibits both RSV-cell binding and fusion events. The inhibition of RSV is mediated via binding to the fusion protein on the viral surface. A closely related analog, MAY-158830, which is much less active in the virus-infectivity assay does not inhibit binding and fusion of RSV with Vero cells. Conclusions: RFI-641, an in vivo active RSV inhibitor, is shown to inhibit both binding and fusion of RSV with cells, events that are early committed steps in RSV entry and pathogenicity. The results described here demonstrate that a non-peptidic, small mol. can inhibit binding and fusion of enveloped virus specifically via interaction with the viral fusion protein.

197366-24-B, RFI 641

IT RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (RFI 641; RFI-641 inhibits entry of respiratory syncytial virus via interactions with fusion protein)

RN 197366-24-B CAPLUS

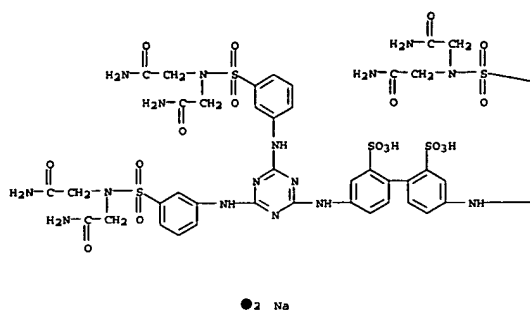
CN [1,1'-Biphenyl]-2,2'-disulfonic acid,

4,4'-bis[[4,6-bis[[3-[[bis(2-amino-2-oxoethyl)amino]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-, disodium

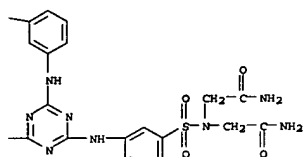
salt (9CI) (CA INDEX NAME)

L5 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

PAGE 1-A



PAGE 1-B

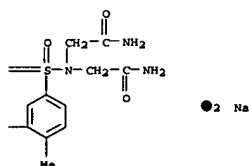


IT 388631-62-7, MAY 158830

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (RPI-641 inhibits entry of respiratory syncytial virus via interactions with fusion protein)

L5 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

PAGE 1-B



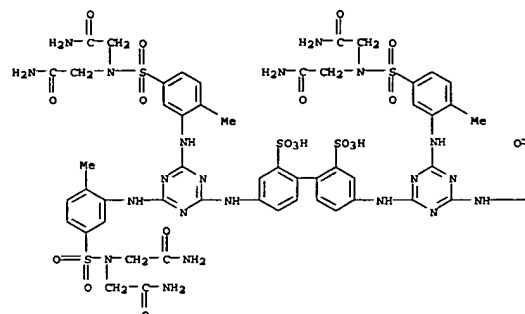
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L5 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

RN 388631-62-7 CAPLUS
 CN [1,1'-Biphenyl]-2,2'-disulfonic acid,
 4,4'-bis[4,6-bis[5-[[bis(2-amino-2-

oxoethyl)amino]sulfonyl]-2-methylphenyl]amino]-1,3,5-triazin-2-yl]amino]-, disodium salt (9CI) (CA INDEX NAME)

PAGE 1-A



L5 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1997:769193 CAPLUS

DOCUMENT NUMBER: 128:88933

TITLE: Preparation of triazine-containing anionic compounds and their use as antiviral agents
 Gluzman, Yakov; Lerocque, James Paul; O'Hara, Bryan Mark; Morin, John Edward; Ellestad, George Alfred; Mitaner, Boris; Ding, Wei Dong; Raifeid, Yuri Efimovich; Nikitenko, Antonina Aristotelev

PATENT ASSIGNEE(S): American Cyanamid Co., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 31 pp.

CODEN: JKXKAF

LANGUAGE: Patent

FAMILY ACC. NUM. COUNT: Japanese

PATENT INFORMATION: 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09309882	A2	19971202	JP 1997-28029	19970212
US 5852015	A	19981222	US 1997-789038	19970127
SK 282598	B6	20021008	SK 1997-179	19970206
NO 970052	A	19970814	NO 1997-652	19970212
CA 2197394	AA	19980727	CA 1997-2197394	19970212
IL 120206	A1	20000217	IL 1997-120206	19970212
RU 2170731	C2	20010720	RU 1997-102335	19970212
CZ 290450	B6	20020717	CZ 1997-423	19970212
NZ 328399	A	20010427	NZ 1997-328399	19970723
PRIORITY APPLN. INFO.:			US 1996-11542P	P 19960213
			US 1997-789038	A 19970127

OTHER SOURCE(S): MARPAT 128:88933

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The compds. I (A = II, III, IV, V, VI, VII; R = SO₃H, OSO₃H, OH, CO₂H; B =

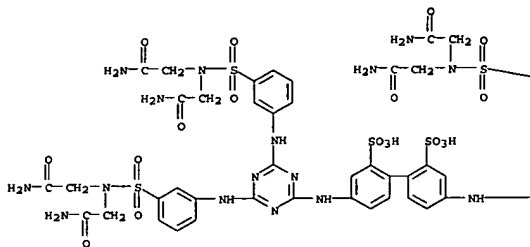
NH, NR1; R1 = C1-6 alkyl which may be substituted with Cl, Br, F, OH, cyano; X = Cl, F, VIII; U = SO₂, CO, NCO, NCS; W = N(YZ)₂, IX, X; Y = C(CH₃)_n; n = 0-6; m = 0-2; Z = H, Me, CF₃, CH₂X, CH₂OH, CO₂H, C1-6 alkoxy, carbonyl, CONR₂, cyano, CH₂OH; X = Cl, Br, F, I; R₂ = H, C1-6 alkyl, their salts, or their esters are claimed. Also claimed are pharmaceutical compns. contg. .gtoreq.1, their salts, or their esters for treatment of infection with respiratory syncytial virus (RSV), herpes simplex virus, HIV virus, cytomegalovirus, and influenza virus. 4,4'-Bis[4,6-di[3-aminophenyl]-N,N-bis(2-carbamylethyl)sulfonylimino]-1,3,5-triazin-2-ylamino]stilbene-2,2'-disulfonic acid, prepd. from cyanuric chloride, 4,4'-diaminostilbene-2,2'-disulfonic acid, and 3-aminophenyl-N,N-bis(2-carbamylethyl)sulfonylimine, inhibited plaque formation of RSV in Vero cells at IC₅₀ 0.1 .mu.g/mL. A small-particle aerosol of this compd. also showed antiviral effect on cotton rats infected with RSV.

IT 197366-24-SP

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

L5 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)
(prepn. of triazine-contg. anionic compds. as antiviral agents)
RN 197366-24-8 CAPLUS
CN [1,1'-Biphenyl]-2,2'-disulfonic acid,
4,4'-bis[[4,6-bis[[3-[[bis(2-amino-2-oxoethyl)amino)sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-,
disodium
salt (9CI) (CA INDEX NAME)

PAGE 1-A



● 2 Na

L5 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)
ACCESSION NUMBER: 1997:632410 CAPLUS
DOCUMENT NUMBER: 127:307402
TITLE: Preparation of bis-aryloxy(amino)-triazinyl-oxo(amino)aryl derivatives as antiviral agents
INVENTOR(S): Gluzman, Yakov; Larocque, James Paul; O'Hara, Bryan Mark; Morin, John Edward; Ellestad, George Alfred; Mitaner, Boris; Ding, Wei-Dong; Raifeld, Yuri Efimovich; Nikitenko, Antonina Aristotelev
PATENT ASSIGNEE(S): American Cyanamid Company, USA
SOURCE: Eur. Pat. Appl., 40 pp.
CODEN: EPXXDX
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

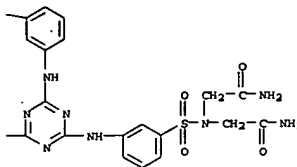
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 795549	A1	19970917	EP 1997-300905	19970212
R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, NL, PT,				
SE US 5852015	A	19981222	US 1997-789038	19970127
SK 282598	B6	20021008	SK 1997-179	19970206
NO 970652	A	19970814	NO 1997-652	19970212
CA 2197394	AA	19980727	CA 1997-2197394	19970212
IL 120206	A1	20000217	IL 1997-120206	19970212
RU 2170731	C2	20010720	RU 1997-102335	19970212
CZ 290450	B6	20020717	CZ 1997-423	19970212
NZ 328399	A	20010427	NZ 1997-328399	19970723
PRIORITY APPLN. INFO.:		US 1996-11542P	P	19960213
		US 1997-789038	A	19970127
OTHER SOURCE(S):		MARPAT 127:307402		
GI				

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title compds. [I: A = II, III, etc.; C' = SO₃H, OSO₃H, OH, COOH; B' = NH, NH, N(C1-6 alkyl); X = Cl, P, IV; U' = SO₂, CO, NC(O), NC(S); W' = N(YZ), V, VI; Y = (CH₂)_n; n = 0-6; m = 0-2; Z = H, CH₃, CF₃, etc.] and their salts, useful as pharmaceuticals, esp. for treating viral infections, particularly infections by respiratory syncytial virus, herpes simplex virus, human immunodeficiency virus, and cytomegalovirus, were prepd. Thus, reaction of cyanuric chloride with 4,4'-diaminostilbene-2,2'-disulfonic acid in the presence of NaOH in dioxane/phosphate buffer soln. followed by addn. of 3-aminophenyl-N,N-bis(2-carbamylethyl)sulfonylamine in DMSO afforded 72% I. 2Na⁺ [A = II; C' = H; B' = NH; X = IV; U'W' = 3-SO₂N[(CH₂)₂CONH₂]₂] which showed IC₅₀ of 0.3 μg/mL against respiratory syncytial virus growth.
IT 197366-24-8P 197366-84-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (prepn. of bis-aryloxy(amino)-triazinyl-oxo(amino)aryl

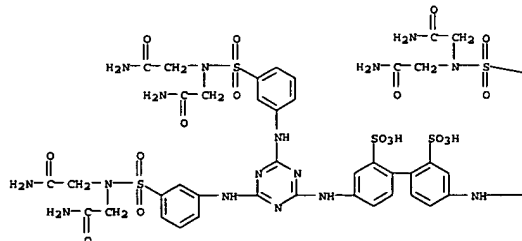
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L5 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)
PAGE 1-B



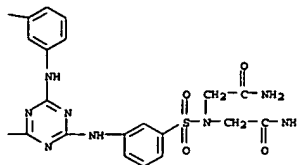
L5 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)
derive. as antiviral agents)
RN 197366-24-8 CAPLUS
CN [1,1'-Biphenyl]-2,2'-disulfonic acid,
4,4'-bis[[4,6-bis[[3-[[bis(2-amino-2-oxoethyl)amino)sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-,
disodium
salt (9CI) (CA INDEX NAME)

PAGE 1-A



● 2 Na

PAGE 1-B

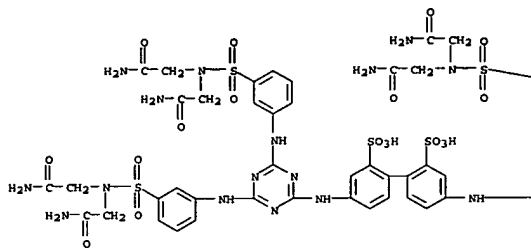


RN 197366-84-0 CAPLUS
CN [1,1'-Biphenyl]-2,2'-disulfonic acid,
4,4'-bis[[4,6-bis[[3-[[bis(2-amino-2-oxoethyl)amino)sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-,
disodium
salt (9CI) (CA INDEX NAME)

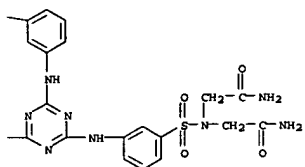
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L5 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)
oxoethyl]amino]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino)- (9CI)
(CA INDEX NAME)

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PAGE 1-B



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Page 8

=> d l4 abs hitstr 1-7

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10/20/2003

L4 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2003 ACS ON STN

AB The antiviral compd. 4',4'-bis[4,6-bis[3-[[bis(carbamoylmethyl)-1-sulfamoyl]phenylamino][1,3,5]triazin-2-ylamino]biphenyl-2,2'-disulfonic acid and its pharmaceutically acceptable salts is prepd. by (a) reacting 2-(3-nitrobenzenesulfonylamino)acetamide with $\text{ClCH}_2\text{CONH}_2$ in the presence of N,N -dimethylformamide and a base to form 2-[[carbamoylmethyl(3-nitrobenzenesulfonyl)amino]acetamide; (b) treating the 2-[[carbamoylmethyl(3-nitrobenzenesulfonyl)amino]acetamide with a reducing agent to form 2-[[3-aminobenzenesulfonyl]carbamoylmethylamino]acetamide; (c) treating the

2-[[3-aminobenzenesulfonyl]carbamoylmethylamino]acetamide with cyanuric chloride to give 2-[[4-[[4-[[bis(carbamoylmethylsulfamoyl)benzyl]-6-chloro-[1,3,5]triazin-2-ylmethyl]benzenesulfonyl]carbamoylmethylamino]acetamide; and (d) reacting the 2-[[4-[[4-[[bis(carbamoylmethylsulfamoyl)benzyl]-6-chloro-[1,3,5]triazin-2-ylmethyl]benzenesulfonyl]carbamoylmethylamino]acetamide with disodium salt of 4,4'-diamino-2,2'-biphenyldisulfonic acid.

IT 197366-24-8P

RL: IMP (Industrial manufacture); PREP (Preparation)
(prepn. and purifn. of antiviral disulfonic acid disodium salt)

RN 197366-24-8 CAPLUS

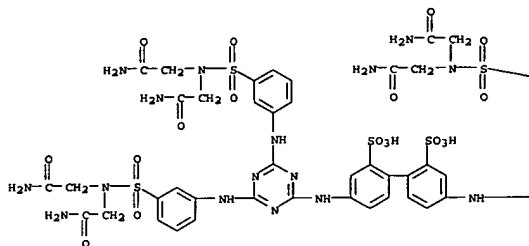
CN [1,1'-Biphenyl]-2,2'-disulfonic acid,

4,4'-bis[[4,6-bis[[3-[[bis(2-amino-2-oxoethyl)amino]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-,

disodium

salt (9CI) (CA INDEX NAME)

PAGE 1-A



● 2 Na

L4 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2003 ACS ON STN

AB RSV (respiratory syncytial virus) fusion is mediated by F-protein, a major viral surface glycoprotein. CL-309623, a specific inhibitor of RSV, interacts tightly with F-protein, which results in a hydrophobic environment at the binding site. The binding is selective for F-protein and does not occur with G-protein, a surface glycoprotein that facilitates

the binding of RSV to target cells, or with lipid membranes at concns. in the sub-millimolar range. Using an assay based on the relief of self-quenching of octadecyl rhodamine (R18) incorporated in the RSV envelope, the authors show that the virus fuses efficiently with large unilamellar vesicles contg. cholesterol, in the absence of specific receptor analogs. Fusion of cp-52, a mutant virus lacking the G and SH surface glycoproteins, with vesicles is inhibited by CL-309623 and

RPI-641 due to specific interactions of the inhibitor(s) with the fusion protein. Both virus-vesicle and virus-cell fusion are inhibited with equal potency.

The formation of the binary complex of CL-309623 with F-protein in its native state, resulting in the inhibition of fusion and entry of virus, is

a prerequisite for the obsd. anti-RSV activity in cell cultures.

IT 197366-24-8, RPI-641

RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(respiratory syncytial virus (RSV) entry inhibitors block F-protein mediated fusion with model membranes)

RN 197366-24-8 CAPLUS

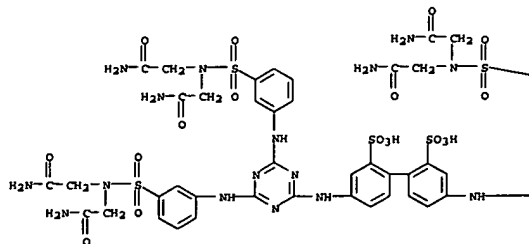
CN [1,1'-Biphenyl]-2,2'-disulfonic acid,

4,4'-bis[[4,6-bis[[3-[[bis(2-amino-2-oxoethyl)amino]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-,

disodium

salt (9CI) (CA INDEX NAME)

PAGE 1-A



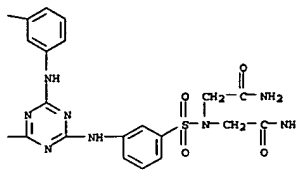
● 2 Na

Habte

L4 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2003 ACS ON STN

(Continued)

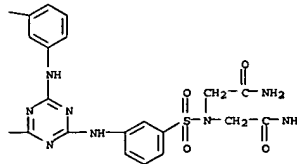
PAGE 1-B



L4 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2003 ACS ON STN

(Continued)

PAGE 1-B



10/20/2003

L4 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN

AB Human respiratory syncytial virus (RSV), a paramyxovirus, is a major cause

of acute upper and lower respiratory tract infections in infants, young children, and adults. RFI-641 is a novel anti-RSV agent with potent in vitro and in vivo activity. RFI-641 is active against both RSV type A and B strains. The viral specificity and the large therapeutic window of RFI-641 (> 100-fold) indicate that the antiviral activity of the compd.

is not due to adverse effects on normal cells. The potent in vitro activity of RFI-641 can be translated to efficacy in vivo: RFI-641 is efficacious when administered prophylactically by the intranasal route in mice, cotton rate, and African green monkeys. RFI-641 is also efficacious when administered therapeutically (24 h postinfection) in the monkey model. Mechanism of action studies indicate that RFI-641 blocks viral F protein-mediated fusion and cell syncytium formation.

IT 197366-24-8, RFI 641

RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(RFI 641; RFI-641 is a potent respiratory syncytial virus inhibitor)

RN 197366-24-8 CAPLUS

CN [1,1'-Biphenyl]-2,2'-disulfonic acid,

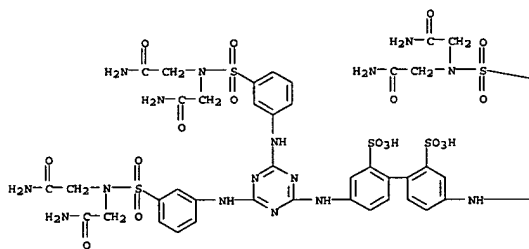
4,4'-bis[[4,6-bis[[3-[[bis(2-amino-2-

oxoethyl)amino)sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-,

disodium

salt (9CI) (CA INDEX NAME)

PAGE 1-A



● 2 Na

L4 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN

AB Background: RFI-641, a small dendrimer-like compd., is a potent and selective inhibitor of respiratory syncytial virus (RSV), which is currently a clin. candidate for the treatment of upper and lower respiratory tract infections caused by RSV. RFI-641 inhibits RSV growth with an IC50 value of 50 nM and prevents syncytia formation in tissue culture. RSV contains of three surface glycoproteins, a small hydrophobic

(SH) protein of unknown function, and attachment (G) and fusion (F) proteins that enable binding and fusion of virus, resp., with target cells. Because of their role in attachment and fusion, the G and F surface proteins are prominent targets for therapeutic intervention. RFI-641 was previously shown to bind purified preps. of RSV fusion protein. Based on this observation, in conjunction with the biol. results, it was speculated that the fusion event might be the target of these inhibitors. Results: A fusion assay based upon the relief of self-quenching of octadecyl rhodamine R18 was used to det. effects of the inhibitors on binding and fusion of RSV. The results show that RFI-641 inhibits both RSV-cell binding and fusion events. The inhibition of RSV is mediated via binding to the fusion protein on the viral surface. A closely related analog, WAY-158830, which is much less active in the virus-infectivity assay does not inhibit binding and fusion of RSV with Vero cells. Conclusions: RFI-641, an in vivo active RSV inhibitor, is shown to inhibit both binding and fusion of RSV with cells, events that are early committed steps in RSV entry and pathogenicity. The results described here demonstrate that a non-peptidic, small mol. can inhibit binding and fusion of enveloped virus specifically via interaction with the viral fusion protein.

IT 197366-24-8, RFI 641

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(RFI 641; RFI-641 inhibits entry of respiratory syncytial virus via interactions with fusion protein)

RN 197366-24-8 CAPLUS

CN [1,1'-Biphenyl]-2,2'-disulfonic acid,

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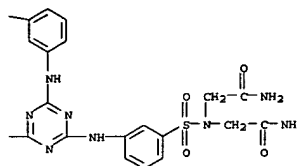
disodium

salt (9CI) (CA INDEX NAME)

L4 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN

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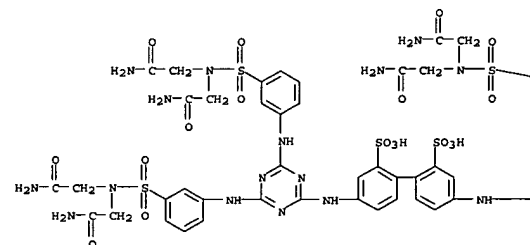
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L4 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN

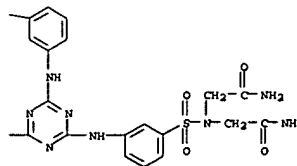
(Continued)

PAGE 1-A



● 2 Na

PAGE 1-B



IT 388631-62-7, WAY 158830

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(RFI-641 inhibits entry of respiratory syncytial virus via interactions with fusion protein)

RN 388631-62-7 CAPLUS

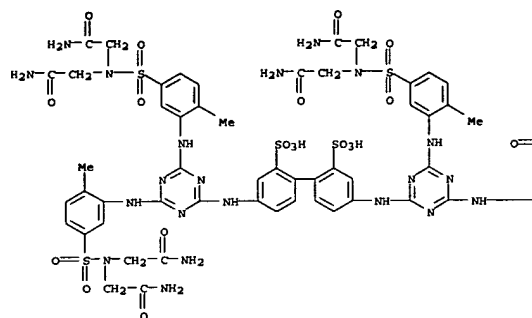
CN [1,1'-Biphenyl]-2,2'-disulfonic acid,

4,4'-bis[[4,6-bis[[5-[[bis(2-amino-2-

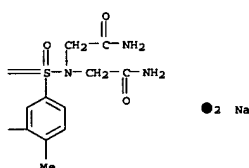
-2-methylphenyl]amino]-1,3,5-triazin-2-yl]amino]-,

L4 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)
disodium salt (9CI) (CA INDEX NAME)

PAGE 1-A

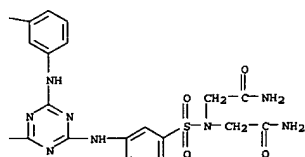


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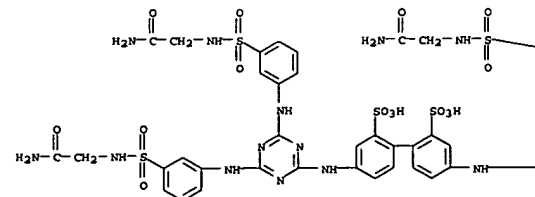
L4 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

PAGE 1-B



IT	350799-02-9
(Biological	RL: BAC (Biological activity or effector, except adverse); BSU
USES	study, unclassified); THU (Therapeutic use); BIOL (Biological study); (Uses) (discovery of RFI-641 as inhibitor of respiratory syncytial virus)
RN	350799-02-9 CAPLUS
CN	[1,1'-Biphenyl]-2,2'-disulfonic acid, 4,4'-bis[4,6-bis[3-[[[2-amino-2-oxoethyl]amino]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]- (9CI) (CA INDEX NAME)

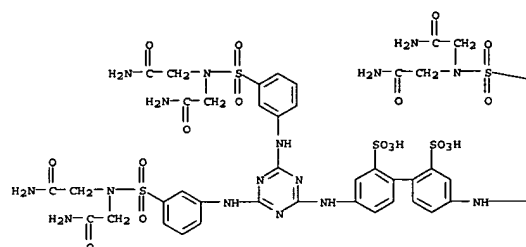
PAGE 1-A



Habte

L4 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
 The design and synthesis of a new potent and selective inhibitor of the
 respiratory syncytial virus are described. This compd., RFI-641, emerged
 from anal. of the structure-activity relationship in a series of biphenyl
 triazine anionic compds. possessing specific anti-RSV activity. RFI-641
 inhibited RSV in vitro and in vivo models.
 IT 197366-24-89
 RL: BAC (Biological activity or effector, except adverse); BSU
 (Biological
 study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);
 BIOL (Biological study); PREP (Preparation); USES (Uses)
 (discovery of RFI-641 as inhibitor of respiratory syncytial virus)
 RN 197366-24-8 CAPLUS
 CN [1,1'-Biphenyl]-2,2'-disulfonic acid,
 4,4'-bis[4,6-bis[3-[[bis(2-amino-2-
 oxoethyl)amino]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-,
 disodium
 \$alt (9CI) (CA INDEX NAME)

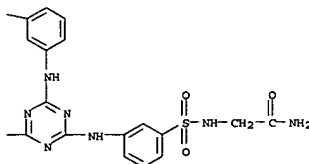
PAGE 1-A



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L4 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

PAGE 1-B



10/20/2003

L4 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
G1

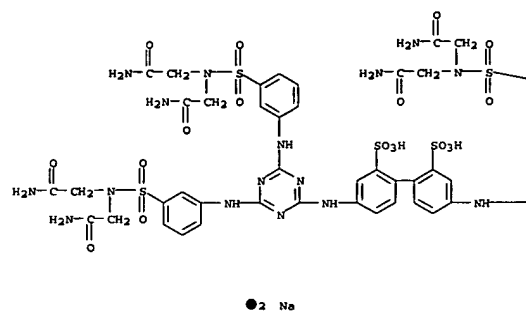
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AB The compds. 1 (A = II, III, IV, V, VI, VII; R = SO₃H, OSO₃H, OH, CO₂H; B = NH, NR₁; R₁ = C1-6 alkyl which may be substituted with Cl, Br, F, OH, cyano; X = Cl, F, VII; U = SO₂, CO, NCO, NCS; W = N(YZ)₂, IX, X; Y = C(CH₃)_n; n = 0-6; m = 0-2; Z = H, Me, CF₃, CH₂X, CH₂OH, CO₂H, C1-6 alkoxy, carbonyl, CONR₂, cyano, CHR₂OH; X = Cl, Br, F, I; R₂ = H, C1-6 alkyl, their salts, or their esters are claimed. Also claimed are pharmaceutical compns. contg. .gtoreq.1 I, their salts, or their esters for treatment of infection with respiratory syncytial virus (RSV), herpes simplex virus, HIV virus, cytomegalovirus, and influenza virus.
4,4'-Bis[4,6-di[3-aminophenyl-N,N-bis(2-carbamylethyl)sulfonylimino]-1,3,5-triazin-2-ylamino]stilbene-2,2'-disulfonic acid, prepd. from cyanuric chloride, 4,4'-diaminostilbene-2,2'-disulfonic acid, and 3-aminophenyl-N,N-bis(2-carbamylethyl)sulfonylimine, inhibited plaque formation of RSV in Vero cells at IC₅₀ 0.1 .mu.g/mL. A small-particle aerosol of this compd. also showed antiviral effect on cotton rats infected with RSV.

IT 197366-24-8P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (prepn. of triazine-contg. anionic compds. as antiviral agents)
RN 197366-24-8 CAPLUS
CN [1,1'-Biphenyl]-2,2'-disulfonic acid,
4,4'-bis[4,6-bis[3-[[bis(2-amino-2-oxoethyl)amino]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-, disodium salt (9CI) (CA INDEX NAME)

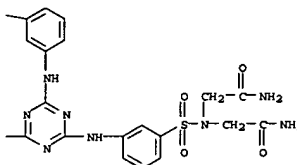
L4 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

PAGE 1-A



● 2 Na

PAGE 1-B



L4 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN
G1

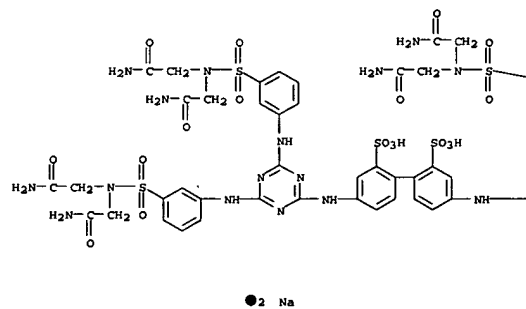
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title compds. [I; A = II, III, etc.; C' = SO₃H, OSO₃H, OH, COOH; B' = NH, NH, N(C1-6 alkyl); X = Cl, F, IV; U' = SO₂, CO, NC(O), NC(S); W' = N(YZ)₂, V, VI; Y = (CH₂)_n; n = 0-6; m = 0-2; Z = H, CH₃, CF₃, etc.] and their salts, useful as pharmaceuticals, esp. for treating viral infections, particularly infections by respiratory syncytial virus, herpes simplex virus, human immunodeficiency virus, and cytomegalovirus, were prepd. Thus, reaction of cyanuric chloride with
4,4'-diaminostilbene-2,2'-disulfonic acid in the presence of NaOH/phosphate buffer soln. followed by addn. of 3-aminophenyl-N,N-bis(2-carbamylethyl)sulfonylimine in DMSO afforded 72% I.2Na+ (A = II; C' = H; B' = NH; X = IV; U'W' = 3-SO₂N[(CH₂)₂CONH₂]₂) which showed IC₅₀ of 0.3 .mu.g/mL against respiratory syncytial virus growth.

IT 197366-24-8P 197366-84-0P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (prepn. of bis-aryloxy(amino)-triazinyl-oxy(amino)aryl deriva. as antiviral agents)
RN 197366-24-8 CAPLUS
CN [1,1'-Biphenyl]-2,2'-disulfonic acid,
4,4'-bis[4,6-bis[3-[[bis(2-amino-2-oxoethyl)amino]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]-, disodium salt (9CI) (CA INDEX NAME)

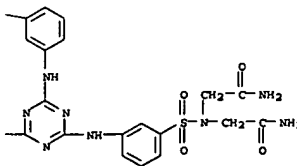
L4 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2003 ACS on STN (Continued)

PAGE 1-A



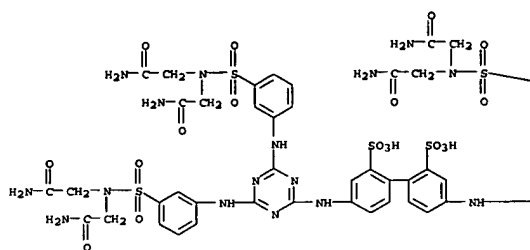
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PAGE 1-B

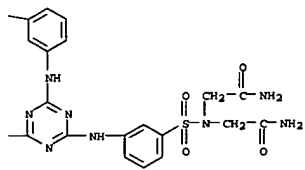


RN 197366-84-0 CAPLUS
CN [1,1'-Biphenyl]-2,2'-disulfonic acid,
4,4'-bis[4,6-bis[3-[[bis(2-amino-2-oxoethyl)amino]sulfonyl]phenyl]amino]-1,3,5-triazin-2-yl]amino]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



=> log y

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TOTAL

ENTRY

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FULL ESTIMATED COST

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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

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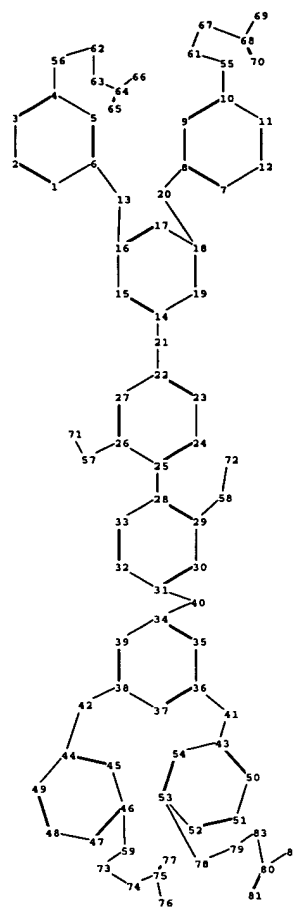
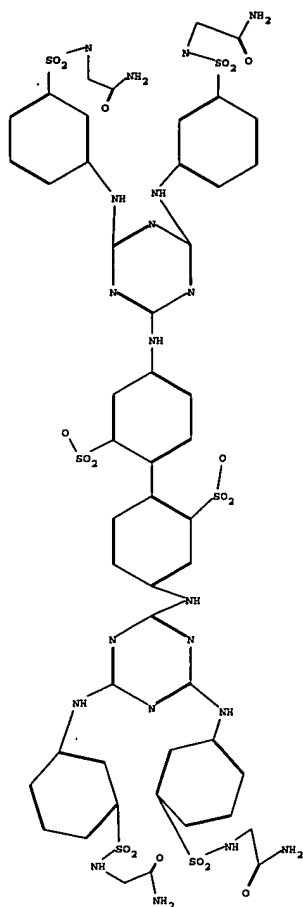
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CA SUBSCRIBER PRICE

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chain bonds :

4-56 6-13 8-20 10-55 13-16 14-21 18-20 21-22 25-28 26-57 29-58 31-40 34-40
36-41 38-42 41-43 42-44 46-59 53-78 55-61 56-62 57-71 58-72 59-73 61-67 62-63
63-64 64-65 64-66 67-68 68-70 68-69 73-74 74-75 75-76 75-77 78-79 79-83 80-82
80-81 80-83

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 14-15 14-19 15-16
16-17 17-18 18-19 22-23 22-27 23-24 24-25 25-26 26-27 28-29 28-33 29-30 30-31
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exact/norm bonds :

6-13 8-20 13-16 14-21 18-20 21-22 31-40 34-40 36-41 38-42 41-43 42-44 55-61
56-62 57-71 58-72 59-73 61-67 62-63 64-65 64-66 68-70 68-69 73-74 75-76 75-77
78-79 79-83 80-82 80-81

exact bonds :

4-56 10-55 25-28 26-57 29-58 46-59 53-78 63-64 67-68 74-75 80-83

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 14-15 14-19 15-16
16-17 17-18 18-19 22-23 22-27 23-24 24-25 25-26 26-27 28-29 28-33 29-30 30-31
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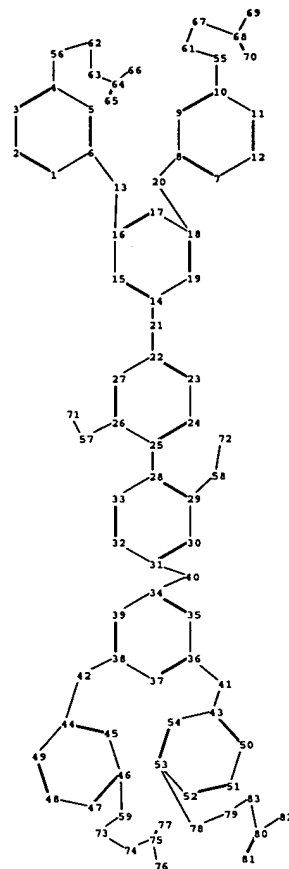
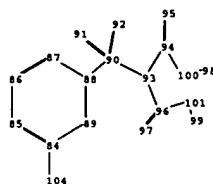
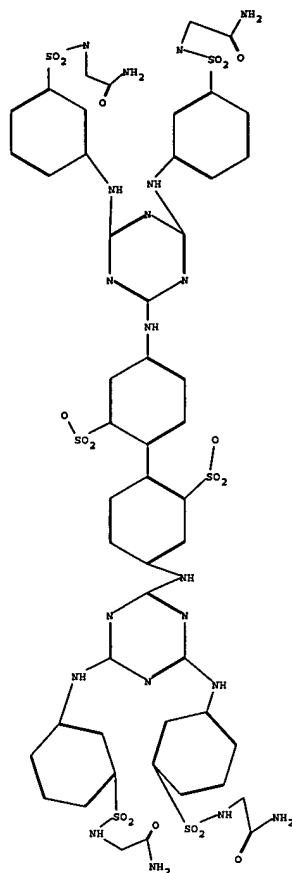
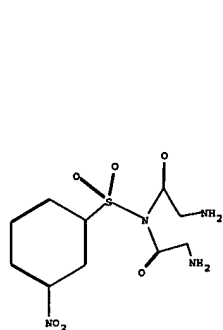
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chain nodes :

13 20 21 40 41 42 55 56 57 58 59 61 62 63 64 65 66 67 68 69 70 71 72
73 74 75 76 77 78 79 80 81 82 83 90 91 92 93 94 95 96 97 98 99 100
101 104

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 14 15 16 17 18 19 22 23 24 25 26 27 28
29 30 31 32 33 34 35 36 37 38 39 43 44 45 46 47 48 49 50 51 52 53 54
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chain bonds :

4-56 6-13 8-20 10-55 13-16 14-21 18-20 21-22 25-28 26-57 29-58 31-40 34-40
36-41 38-42 41-43 42-44 46-59 53-78 55-61 56-62 57-71 58-72 59-73 61-67 62-63
63-64 64-65 64-66 67-68 68-70 68-69 73-74 74-75 75-76 75-77 78-79 79-83 80-82
80-81 80-83 84-104 88-90 90-91 90-92 90-93 93-94 93-96 94-95 94-100 96-97
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ring bonds :

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16-17 17-18 18-19 22-23 22-27 23-24 24-25 25-26 26-27 28-29 28-33 29-30 30-31
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exact/norm bonds :

6-13 8-20 13-16 14-21 18-20 21-22 31-40 34-40 36-41 38-42 41-43 42-44 55-61
56-62 57-71 58-72 59-73 61-67 62-63 64-65 64-66 68-70 68-69 73-74 75-76 75-77
78-79 79-83 80-82 80-81 88-90 90-91 90-92 90-93 93-94 93-96 94-95 96-97 98-100
99-101

exact bonds :

4-56 10-55 25-28 26-57 29-58 46-59 53-78 63-64 67-68 74-75 80-83 84-104 94-100
96-101

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 14-15 14-19 15-16
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isolated ring systems :

containing 7 : 22 : 28 : 43 : 44 :

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
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fragments assigned reactant/reagent role:

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DICTIONARY FILE UPDATES: 19 OCT 2003 HIGHEST RN 606921-26-0

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP
PROPERTIES for more information. See STN Note 27, Searching Properties
in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

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Uploading 10066356.str

L1 STRUCTURE UPLOADED

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L1 HAS NO ANSWERS

L1 STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.

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COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
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FULL ESTIMATED COST

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for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.

FILE CONTENT:1907 - 19 Oct 2003 VOL 139 ISS 16

Some records from 1974 to 1991 are derived from the ZIC/VINITI data file
and provided by InfoChem and some records are produced using some INPI
data from the period prior to 1986.

This file contains CAS Registry Numbers for easy and accurate substance

identification.

Crossover limits have been increased. See HELP RNCROSSOVER for details.

Structure search limits have been raised. See HELP SLIMIT for the new, higher limits.

=> s l1

SAMPLE SEARCH INITIATED 17:01:23 FILE 'CASREACT'

SCREENING COMPLETE - 0 REACTIONS TO VERIFY FROM 0 DOCUMENTS

100.0% DONE 0 VERIFIED 0 HIT RXNS 0 DOCS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED VERIFICATIONS: 0 TO 0

PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1 (0 REACTIONS)

=> s l1 sss full

FULL SEARCH INITIATED 17:01:31 FILE 'CASREACT'

SCREENING COMPLETE - 0 REACTIONS TO VERIFY FROM 0 DOCUMENTS

100.0% DONE 0 VERIFIED 0 HIT RXNS 0 DOCS

SEARCH TIME: 00.00.01

L3 0 SEA SSS FUL L1 (0 REACTIONS)

=> log y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

97.85

98.86

STN INTERNATIONAL LOGOFF AT 17:01:37 ON 20 OCT 2003